

236445

SEARCH REQUEST FORM

Examiner # (Mandatory): 80299 Requester's Full Name: Wickay Ronesi
Art Unit 1714 Location (Bldg/Room#): 10D35 Phone (circle 305 306 308) 2-2701
Serial Number: 10/507,124 Results Format Preferred (circle): PAPER DISK E-MAIL
Title of Invention _____
Inventors (please provide full names): _____

Earliest Priority Date: _____

Keywords (include any known synonyms registry numbers, explanation of initialisms): _____

Search Topic:

Please write detailed statement of the search topic, and the concept of the invention. Describe as specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples of relevant citations, authors, etc., if known. You may include a copy of the abstract and the broadcast or most relevant claim(s).

Please see attached.

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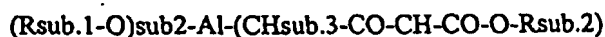
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____ Westlaw
____ Other (specify)

Claims

1. An aldehyde resin binder for a fiber reinforced antifouling paint comprising
- 5 a) 2 to 20 parts per 100 parts of aldehyde resin of an aluminium di-secalkoxide acetoacetic ester chelate (Component A) represented by the following formula (I):



- 10 wherein $R_{\text{sup.1}}$ represents a sec.-alkyl group having 3 to 10 carbon atoms, or a cycloalkyl group; and $R_{\text{sup.2}}$ represents an alkyl group having 1 to 10 carbon atoms, or a cycloalkyl group;

- b) 0,5 to 8 parts per 100 parts of aldehyde resin of a monoalkoxy organotitanate-IV (Component B) represented by the following formula (II):

15



- wherein $R_{\text{sub.3}}$ is a monovalent organic group having from 2 to 30 carbon atoms or a substituted derivative thereof; X in the above formulae independently represents an acylate group, a
- 20 sulfonic acid residue, a phosphoric acid residue or a pyrophosphoric ester residue, or a mixture thereof.

2. The paint or paint base of claim 1 wherein the total amount of said fiber-reinforced aldehyde resin plus said additive Component A is between about 15% and about 45%
- 25 based upon the total weight of the paint or paint base composition .

3. The paint or paint base of claim 1 wherein the total amount of said fiber-reinforced aldehyde resin plus said additive Component B is between about 15% and about 45%
- based upon the total weight of the paint or paint base composition .

30

4. A process for providing a high-build marine antifouling paint or paint base characterized by a fiber - reinforced aldehyde resin as binder and containing metalliferous pigments which are sparingly soluble in seawater which comprises the steps of:

- (a) adding said Aluminium di-sec-alkoxide acetoacetic ester chelate (Component A) and thereafter
- (b) adding said monoalkoxy organo-titanate-IV (Component B- as defined in claim 1) to said aldehyde resin to provide a paint or paint base, said additive Component A being present in an amount of between about 0,4% and about 4%, and said additive Component B- as defined in claim 1- being present in an amount of between about 0,2% and about 2%, the total amount of said Additive Component A and Additive Component B being between about 0,5% and about 5% based upon the total weight of the paint or paint base.
- 5
- 10
5. The process of claim 4 wherein steps (a) and (b) are carried out simultaneously.
6. An antifouling coating composition comprising a binder prepared according to claim 4 and, one or more auxiliary additive selected from the group consisting of pigments, antisepting agents, plasticizers, solvents, biocides , fibers, stabilizers and film consumption regulators.
- 15

10/507124

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
19 August 2004 (19.08.2004)

PCT

(10) International Publication Number
WO 2004/069940 A3

(51) International Patent Classification⁷: **C09D 161/02,**
5/16

(21) International Application Number:
PCT/EP2004/001032

(22) International Filing Date: 4 February 2004 (04.02.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
03002539.9 5 February 2003 (05.02.2003) EP

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Behrendt, Sollner Strasse 38, 81479 München (DE).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,

AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
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TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), Euro-
pean (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR,
GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK,
TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW,
ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
16 September 2004

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: ANTIFOULING COATING

(57) Abstract: This invention provides a high-build, self-polishing marine antifouling paint which affords a coated film having antifouling properties for a long period of time. The paint binder which is a fiber reinforced aldehyde resin comprises two synergistically acting components, Component A and Component B. Component A an aluminium di-sec-alkoxide ace-toacetic ester chelate is represented by the following formula (I): (R_{sub.1}-O)-Al-(CH₃-CO-CH-CO-O-R_{sub.2}) wherein R_{sup.1} represents an sec.-alkyl group having 3 to 10 carbon atoms, or a cycloalkyl group; and R_{sub.2} represents an alkyl group having 1 to 10 carbon atoms, or a cycloalkyl group. Component B a monoalkoxy organo-titanate-IV is represented by the following formula (II): R_{sub.3}-O-Ti(-X)₃ wherein R_{sub.3} is a monovalent organic group having from 2 to 30 carbon atoms or a substituted derivative thereof; X in the above formulae independently represents an acylate group, a sulfonic acid residue, a phosphoric acid residue or a pyrophosphoric ester residue, or a mixture thereof.

WO 2004/069940 A3



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Bib Data Sheet

CONFIRMATION NO. 8900

SERIAL NUMBER 10/507,124	FILING OR 371(c) DATE 09/10/2004 RULE	CLASS 106	GROUP ART UNIT 1755	ATTORNEY DOCKET NO. KIRS.0013
APPLICANTS Holger Blum, Hamburg, GERMANY; ** CONTINUING DATA ***** This application is a 371 of PCT/EP04/01032 02/04/2003 ** FOREIGN APPLICATIONS ***** EUROPEAN PATENT OFFICE (EPO) 03002539.9 02/05/2003 <p style="text-align: center;">** SMALL ENTITY **</p>				
Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no 35 USC 119 (a-d) conditions <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after met Allowance Verified and Acknowledged Examiner's Signature _____ Initials _____		STATE OR COUNTRY GERMANY	SHEETS DRAWING	TOTAL CLAIMS 6 INDEPENDENT CLAIMS 3
ADDRESS Reed Smith Suite 1400 3110 Fairview Park Drive Falls Church ,VA 22042				
TITLE Antifouling coating				
FILING FEE RECEIVED 460	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:		<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees (Filing) <input type="checkbox"/> 1.17 Fees (Processing Ext. of time) <input type="checkbox"/> 1.18 Fees (Issue) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit	

Anekwe, Imelda (ASRC)

236945

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Sent: Wednesday, September 05, 2007 12:16 PM
To: STIC-EIC1700
Subject: Database Search Request, Serial Number: 10/507124

Requester: VICKEY RONESI (P/1714)
Art Unit: GROUP ART UNIT 1714
Employee Number: 80299
Office Location: REM 10D35
Phone Number: (571)272-2701
Mailbox Number:

SCIENTIFIC REFERENCE BR
Sci & Tech Inf. Cntr.

SEP 05 KCC

Pat. & T.M. Office

Case serial number: 10/507124
Class / Subclass(es): 523/122
Earliest Priority Filing Date: 2/5/03
Format preferred for results: Paper
Attachments: No attachment.
Search Topic Information:

Please search for the composition of claim 1, both with text and structure searching.
Special Instructions and Other Comments:

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L3 7 S L1 FUL

SAV L3 RON124/A

L4 30619 S (TI (L) C (L) H (L) O)/ELS

FILE 'HCA' ENTERED AT 19:08:18 ON 14 SEP 2007

L5 15 S L3

L6 60841 S L4

L7 3 S L5 AND L6

L8 40 S (ALUMINUM# OR AL) (3A) (((S OR SEC OR SECONDARY) (2A) ALKOX

L9 1253 S (TITANIUM# OR TI OR TITANAT?) (3A)?ALKOXY?

L10 11 S (L5 OR L8) AND (L6 OR L9)

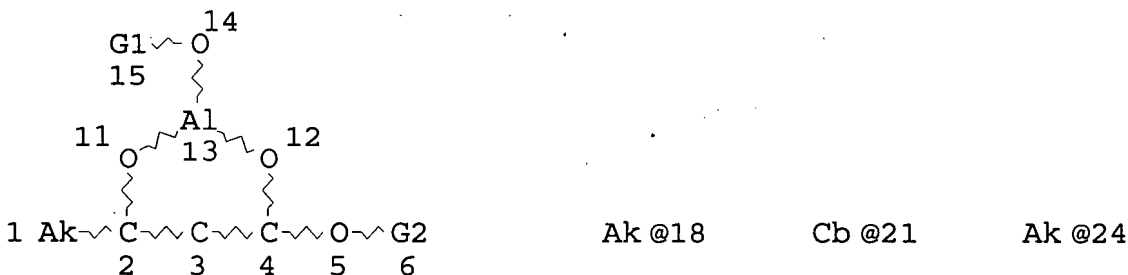
L11 8 S L10 NOT L7

L12 12 S L5 NOT (L7 OR L11)

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L1 STR



VAR G1=18/21

VAR G2=24/21

NODE ATTRIBUTES:

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CONNECT IS E1 RC AT 18

CONNECT IS E1 RC AT 24
DEFAULT MLEVEL IS ATOM
GGCAT IS SAT AT 1
GGCAT IS BRA SAT AT 18
GGCAT IS SAT AT 21
GGCAT IS SAT AT 24
DEFAULT ECLEVEL IS LIMITED
ECOUNT IS M3 C AT 18

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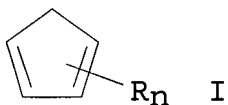
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=> D L7 1-3 CBIB ABS HITSTR HITRN

L7 ANSWER 1 OF 3 HCA COPYRIGHT 2007 ACS on STN
136:38970 Radiation-curable ink composition with good gelation for
high-quality printing. Sato, Koji; Tanaka, Yasuhiro; Oizumi, Kei
(Toyo Ink Mfg. Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP
2001335625 A 20011204, 14 pp. (Japanese). CODEN: JKXXAF.
APPLICATION: JP 2000-157526 20000529.

GI



AB Title ink compn. gelable at $\leq 120^\circ$ comprises a resin of
m.p. 50° - 150° , prepd. from the reaction of (A) arom.

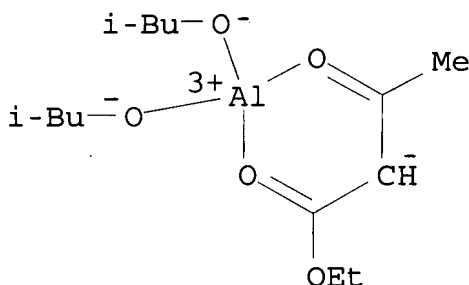
monobasic acids (e.g., benzoic acid), (B) polyols (e.g., pentaerythritol), (C) arom. multibasic acids (anhydrides) (e.g., phthalic anhydride), (D) petroleum resins composed of five-member ring compds. I (R: C1-3 alkyl; n: integer 0-6) (e.g., Marukarez M 510) and/or resin acids, and (F) α,β -ethylenic unsatd. carboxylic acids (anhydrides) (e.g., maleic anhydride). Thus, 40 parts of the resin were mixed with ditrimethylolpropane tetraacrylate 60, and polymn. initiator hydroquinone 0.1 part, showing viscosity 148 (before) and 285 (after addn. of gelling agent ALCH 1 part).

IT 15629-83-1, Chelope Al-EB 102

(Chelope Al-EB 102; prepn. of radiation-curable ink compn. with good gelation for high-quality printing)

RN 15629-83-1 HCA

CN Aluminum, [ethyl 3-(oxo- κ O)butanoato- κ O']bis(2-methyl-1-propanolato)-, (T-4)- (9CI) (CA INDEX NAME)

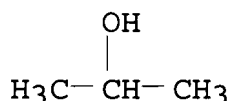


IT 546-68-9, Tetraisopropyl titanate

(prepn. of radiation-curable ink compn. with good gelation for high-quality printing)

RN 546-68-9 HCA

CN 2-Propanol, titanium(4+) salt (4:1) (CA INDEX NAME)



● 1/4 Ti(IV)

IT 15629-83-1, Chelope Al-EB 102

(Chelope Al-EB 102; prepn. of radiation-curable ink compn. with good gelation for high-quality printing)

IT 546-68-9, Tetraisopropyl titanate

(prepn. of radiation-curable ink compn. with good gelation for

high-quality printing)

L7 ANSWER 2 OF 3 HCA COPYRIGHT 2007 ACS on STN

107:106282 Electrostatographic positive-charging toners. Murai, Koichi; Maruyama, Masatoshi (Nippon Carbide Industries Co., Inc., Japan). Jpn. Kokai Tokkyo Koho JP 62062369 A 19870319 Showa, 8 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1985-201721 19850913.

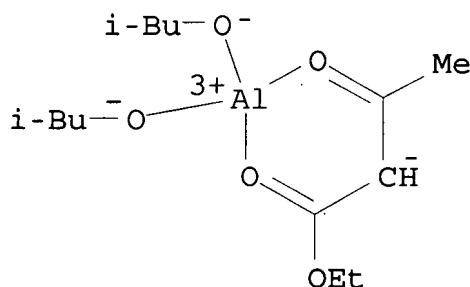
AB The toner contains a copolymer 99.99-90% with an ionization potential 8-11 eV and a chelate compd. 0.01-10% (the sum of the above 2 components is 100%). A Bu acrylate-divinylbenzene-styrene-vinylpyrrolidone copolymer, monoethylacetoacetatoaluminum diisopropoxide, C black, and a charge-controlling agent were mixed to give the toner. The toner shows improved offset characteristics for high-speed copying without using silicone oil.

IT 15629-83-1 21474-51-1 96542-47-1

(electrostatog. pos.-charging toners contg., for improved offset characteristics in high-speed copying without silicone oil)

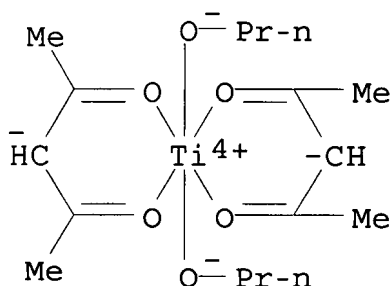
RN 15629-83-1 HCA

CN Aluminum, [ethyl 3-(oxo-κO)butanoato-κO']bis(2-methyl-1-propanolato)-, (T-4)- (9CI) (CA INDEX NAME)



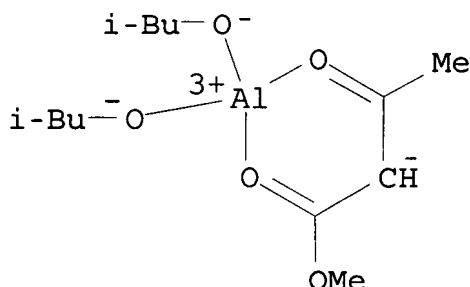
RN 21474-51-1 HCA

CN Titanium, bis(2,4-pentanedionato-κO2,κO4)dipropoxy- (CA INDEX NAME)



RN 96542-47-1 HCA

CN Aluminum, (methyl 3-oxobutanoato-01',03)bis(2-methyl-1-propanolato) -
, (T-4) - (9CI) (CA INDEX NAME)



IT 15629-83-1 21474-51-1 96542-47-1
(electrostatog. pos.-charging toners contg., for improved offset characteristics in high-speed copying without silicone oil)

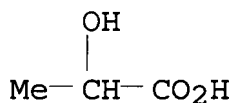
L7 ANSWER 3 OF 3 HCA COPYRIGHT 2007 ACS on STN
102:229477 Forming a resist pattern. Yasui, Toshihiko; Matsumoto, Tetsuo; Akaike, Akihiko (Dainippon Ink Chemical Industry Co. , Japan). Brit. UK Pat. Appl. GB 2141131 A 19841212, 13 pp. (English). CODEN: BAXXDU. APPLICATION: GB 1984-11412 19840503. PRIORITY: JP 1983-78241 19830506.

AB A resist ink is described for lithog. fabrication of printed circuits. The resist ink provides irrads. and/or heat curable patterns highly resistant to etching, soldering and plating. The resist ink consists of (1) a metal chelate deriv. of a resin selected from alkyd resins, modified alkyd resins, fatty acid-modified epoxy resins, urethanized oils and maleinized oils and (2) a polymerizable compd. contg. ≥ 2 ethylenically unsatd. bonds/mol. Thus, a Ni-alloy support was coated with a compn. contg. a resin vehicle (contg. a reaction product of Beckosol 1343 100 with tris(ethylacetoacetate) aluminum 1 parts and contg. trimethylolpropane triacrylate 50 parts) 87, trimethylolpropane triacrylate 6, dimethoxyphenyl acetophenone 5, phthalocyanine blue 2 parts, printed by a sheet-fed lithog. press having mounted a wet lithog. plate having a line image portion of a test pattern. The printed pattern was heated by IR heating device for 5.5 s, cured by UV for 5 s, heat-cured at 150° for 15 min, etched with a FeCl₃ at 40° (spraying pressure at 1.2 kg/cm²) for 60 s to show a good etching resistance.

IT 14814-02-9D, reaction product with rosin-modified alkyd resin 96542-47-1D, reaction product with modified epoxy ester resin and modified alkyd resin
(resist ink for lithog. fabrication of printed circuits contg.)

RN 14814-02-9 HCA

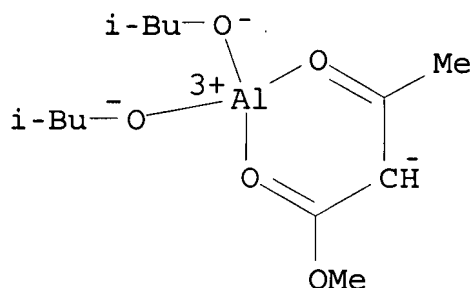
CN Propanoic acid, 2-hydroxy-, titanium salt (1:?) (CA INDEX NAME)



●x Ti(x)

RN 96542-47-1 HCA

CN Aluminum, (methyl 3-oxobutanoato-O1',O3)bis(2-methyl-1-propanolato)-
, (T-4)- (9CI) (CA INDEX NAME)



IT 14814-02-9D, reaction product with rosin-modified alkyd resin 96542-47-1D, reaction product with modified epoxy ester resin and modified alkyd resin
(resist ink for lithog. fabrication of printed circuits contg.)

=> D L11 1-8 CBIB ABS HITSTR HITIND

L11 ANSWER 1 OF 8 HCA COPYRIGHT 2007 ACS on STN *Instant Application*
141:175542 Antifouling coating, aldehyde binder, and providing coating or paint with antifouling properties. Blum, Holger (Chemical Investments Ltd., Gibraltar). Eur. Pat. Appl. EP 1445293 A1 20040811, 12 pp. DESIGNATED STATES: R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK. (English). CODEN: EPXXDW.
APPLICATION: EP 2003-2539 20030205.

AB This novel high-build, self-polishing marine antifouling paint affords a coated film having antifouling properties for a long period of time. The paint binder which is a fiber reinforced aldehyde resin comprises 2 synergistically acting components, Component A and Component B. Component A is an Al di-**sec-alkoxide** acetoacetic ester chelate
(R1O)2-Al-(CH3COCHCOOR2), where R1 = sec.-alkyl group having 3-10 C

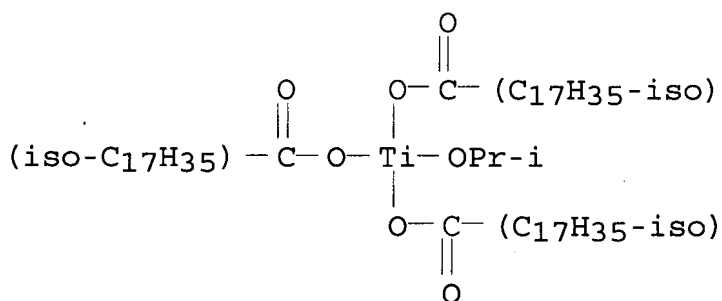
atoms, or a cycloalkyl group; and R2 = C1-10-alkyl, or a cycloalkyl group. Component B is a **monoalkoxy** organotitanate IV R3O-Ti(X)3, where R3 is a monovalent org. group having 2-30 C atoms or a substituted deriv.; X = acylate group, a sulfonic acid residue, H3PO4 residue or a pyrophosphoric ester residue, or a mixt. The coating compn. includes (a) ≥ 1 sparingly sol. metalliferous pigment, (b) ≥ 1 marine biocide which can also function as the pigment, and optionally (c) ≥ 1 highly insol. pigments, and (d) film consumption regulators. Coating films formed on a hull or an underwater structure, have excellent antifouling properties for a long period of time and consumability (self-polishing properties). Further, these antifouling coating compns. have excellent storage stability.

IT 61417-49-0 61436-47-3 67691-13-8
103406-74-2, LICA 09 103432-54-8, LICA 38
733745-03-4

(antifouling coating contg. **aluminum di-sec-alkoxide** acetoacetic ester chelate and alkoxy organotitanate, and pigment biocides and preventing biocide/binder interaction)

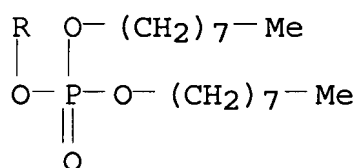
RN 61417-49-0 HCA

CN Titanium, tris(isooctadecanoato- κ O)(2-propanolato)- (CA INDEX NAME)

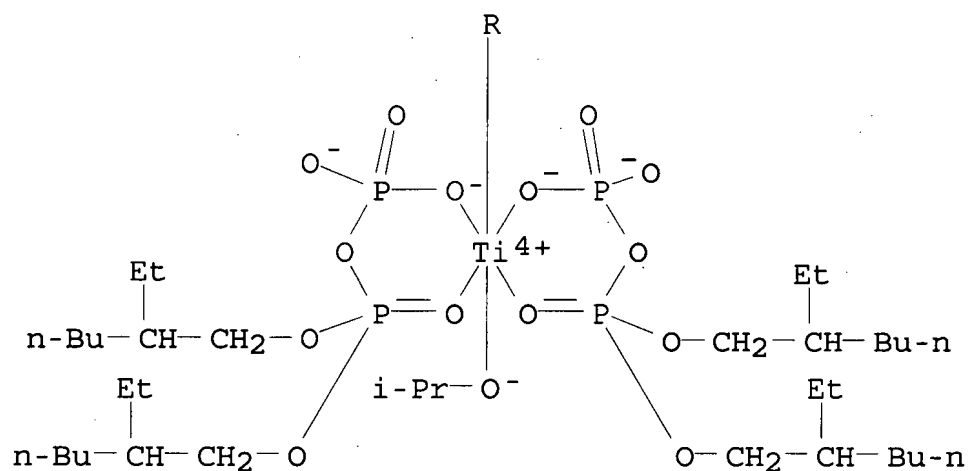


RN 61436-47-3 HCA

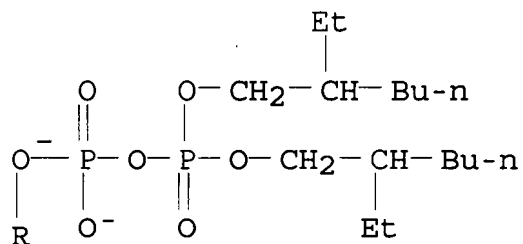
CN Titanium, tris(dioctyl phosphato- κ O')(2-propanolato)-, (T-4)- (CA INDEX NAME)



PAGE 1-A

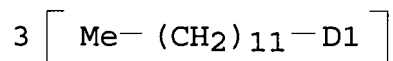
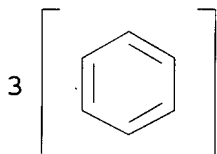


PAGE 2-A

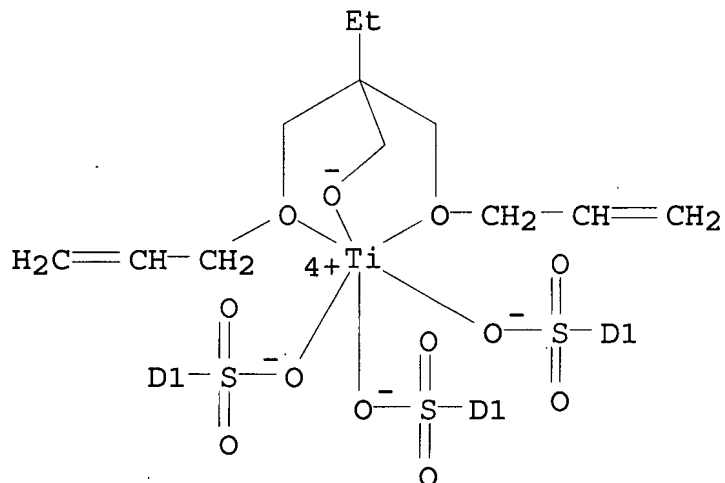
●3 H⁺

RN 103406-74-2 HCA
 CN Titanium, [2,2-bis[(2-propenyloxy-κO)methyl]-1-butanolato-κO]tris(dodecylbenzenesulfonato-κO) - (CA INDEX NAME)

PAGE 1-A

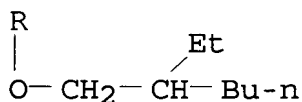
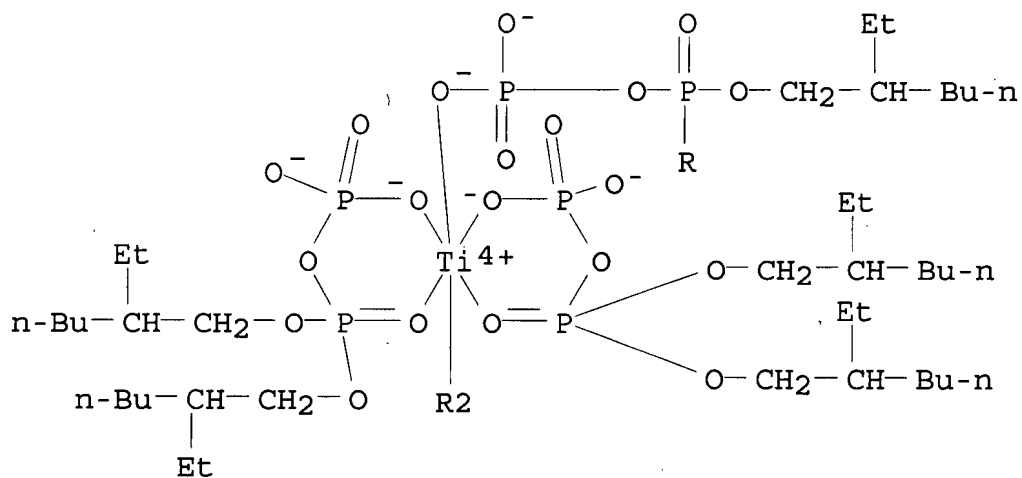


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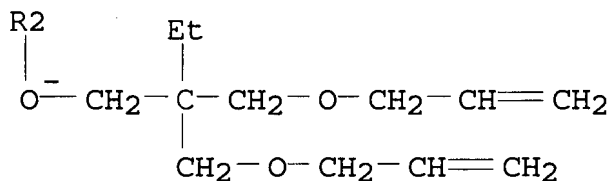


RN 103432-54-8 HCA
 CN Titanate(3-), [P,P-bis(2-ethylhexyl) diphosphato(2-)-
 $\kappa O''$]bis[P,P-bis(2-ethylhexyl) diphosphato(2-)-
 $\kappa O''$, $\kappa O''''$][2,2-bis[(2-propen-1-yloxy)methyl]-1-
 butanolato- κO]-, hydrogen (1:3) (CA INDEX NAME)

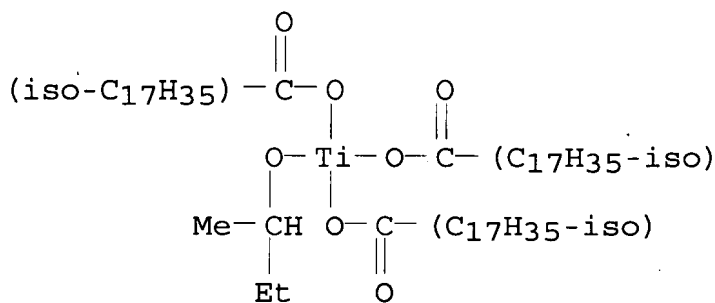
PAGE 1-A



PAGE 2-A

●3 H⁺

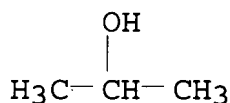
RN 733745-03-4 HCA
 CN Titanium, (2-butanolato)tris(isooctadecanoato-κO) - (9CI) (CA
 INDEX NAME)



IC ICM C09D161-02
 ICS C09D005-16
 CC 42-5 (Coatings, Inks, and Related Products)
 Section cross-reference(s): 60
 IT Coating materials
 (antifouling, marine, self-polishing; antifouling coating contg.
aluminum di-sec-alkoxide acetoacetic
 ester chelate and alkoxy organotitanate, and pigment biocides and
 preventing biocide/binder interaction)
 IT 733024-64-1P, Acetaldehyde-crotonaldehyde-3-hydroxybutyraldehyde
 copolymer
 (antifouling coating contg. **aluminum di-sec-alkoxide** acetoacetic ester chelate and alkoxy
 organotitanate, and pigment biocides and preventing
 biocide/binder interaction)
 IT 1111-67-7, Copper Thiocyanate 1317-39-1, Dicopperoxide, uses

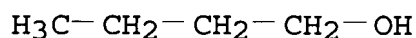
14782-75-3 14915-37-8 24772-51-8 61417-49-0
61436-47-3 67691-13-8 103406-74-2, LICA
09 103432-54-8, LICA 38 733745-03-4
(antifouling coating contg. **aluminum di-sec-alkoxide** acetoacetic ester chelate and alkoxy organotitanate, and pigment biocides and preventing biocide/binder interaction)

L11 ANSWER 2 OF 8 HCA COPYRIGHT 2007 ACS on STN
130:184868 Secondary nonaqueous electrolyte batteries. Tsukahara, Jiro (Fuji Photo Film Co., Ltd., Japan; Ube Industries, Ltd.). Jpn. Kokai Tokkyo Koho JP 11067269 A 19990309 Heisei, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1997-222860 19970819.
AB The batteries have cathodes, anodes, Li salt contg. nonaq. electrolytes, and metal alkoxides $M(OR)_n$, where $M = Al, Si, Sc, Ti, Ge, In, Zr, Sn$, lanthanide elements, Hf and/or Pb; $R = \text{alkyl or aryl group}$, and $n = 3-6$. The battery anodes are preferably amorphous chalcogenide or oxide contg. ≥ 3 of Group 1, 2, 13, 14, and Group 15 elements.
IT 546-68-9 5593-70-4
(metal **alkoxide** additives for **secondary** lithium batteries)
RN 546-68-9 HCA
CN 2-Propanol, titanium(4+) salt (4:1) (CA INDEX NAME)



● $\frac{1}{4}$ Ti(IV)

RN 5593-70-4 HCA
CN 1-Butanol, titanium(4+) salt (4:1) (CA INDEX NAME)



● $\frac{1}{4}$ Ti(IV)

IC ICM H01M010-40
ICS H01M004-02; H01M004-58
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
IT 546-68-9 555-31-7, **Aluminum iso-propoxide**

555-75-9, **Aluminum** ethoxide 682-01-9 1071-76-7,
 Zirconium butoxide **5593-70-4** 6770-81-6 14165-55-0,
 Germanium ethoxide
 (metal **alkoxide** additives for **secondary**
 lithium batteries)

L11 ANSWER 3 OF 8 HCA COPYRIGHT 2007 ACS on STN

126:160893 Preparation of Al₂O₃-TiO₂ composite powder from alkoxides
 (1). 1. Preparation of Al₂TiO₅ by the sol-gel method and the effects
 of additives. Jeong, Jong Yeol; Lee, Hyung Min; Lee, Hong Lim (Dep.
 Ceramic Eng., Yonsei Univ., Seoul, 120-749, S. Korea). Yoop
 Hakhoechi, 33(10), 1138-1146 (Korean) 1996. CODEN: YPHJAP. ISSN:
 0372-7807. Publisher: Korean Ceramic Society.

AB Al₂TiO₅ powder was prepd. by the sol-gel processing from the metal
alkoxides; aluminum sec-butoxide (
Al(OC₄H₉)₃) and tetra-Et orthotitanate (Ti(OC₂H₅)₄). The
 particles of Al₂TiO₅ produced from alkoxides were <1.5 µm and
 >90% were <1 µm; however, those prepd. from com. alumina and
 titania powders were 0.5-7 µm with only 60% <1 µm and 90% <2.5
 µm. Therefore, Al₂TiO₅ powder produced from alkoxides had a
 narrower particle size distribution that produced from com. alumina
 and titania powders. The addn. of mullite or Al₂O₃ powder to the
 prepd. aluminum titanate inhibited the grain growth and this
 resulted in decrease in microcrack and increase in d. of sintered
 materials.

IT **3087-36-3**, Tetraethyl orthotitanate
 (precursor; sol-gel prepn. of Al₂O₃-TiO₂ composite powder from
 alkoxides for prepn. of Al₂TiO₅ ceramics)

RN 3087-36-3 HCA

CN Ethanol, titanium(4+) salt (4:1) (CA INDEX NAME)



● 1/4 Ti(IV)

CC 57-2 (Ceramics)

IT 3085-30-1, 1-Butanol, aluminum salt **3087-36-3**, Tetraethyl
 orthotitanate
 (precursor; sol-gel prepn. of Al₂O₃-TiO₂ composite powder from
 alkoxides for prepn. of Al₂TiO₅ ceramics)

L11 ANSWER 4 OF 8 HCA COPYRIGHT 2007 ACS on STN

122:32859 {Perfluorosulfonate Ionomer}/[Mixed Inorganic Oxide]
 Nanocomposites via Polymer-in Situ Sol-Gel Chemistry. Shao, Phoebe
 L.; Mauritz, K. A.; Moore, R. B. (Department of Polymer Science,

University of Southern Mississippi, Hattiesburg, MS, 39406-0076, USA). Chemistry of Materials, 7(1), 192-200 (English) 1995. CODEN: CMATEX. ISSN: 0897-4756. Publisher: American Chemical Society.

AB Mixed-metal oxide/Nafion hybrid films were formulated via in situ sol-gel reactions for tetra-Bu titanate/tetraethoxysilane and for **aluminum tri-sec-butoxide/tetraethoxysilane alkoxide** pairs. Inorg. compn. profiles across film thicknesses were investigated via X-ray energy dispersive spectroscopy with an environmental scanning microscope. Mech. tensile anal. was used to infer inorg. oxide nanophase/Nafion interfacial interactions, as well as interknitting of inorg. oxide nanoparticles. The TiO₂ component within the titanosilicate-filled hybrids was concd. in glassy near-surface regions, whereas the SiO₂-Al₂O₃ phase within aluminosilicate-filled hybrids was distributed homogeneously causing mech. ductility. Investigations of structural topol. within the inorg. oxide phases were conducted via IR and NMR spectroscopies.

IT **5593-70-4**, Tetrabutyl titanate
(perfluorosulfonate ionomer-aluminum or titanium silicon oxide nanocomposites prepd. via polymer-in situ sol-gel method and their structure)

RN 5593-70-4 HCA

CN 1-Butanol, titanium(4+) salt (4:1) (CA INDEX NAME)

H₃C-CH₂-CH₂-CH₂-OH

● 1/4 Ti(IV)

CC 37-6 (Plastics Manufacture and Processing)

IT 78-10-4, Tetraethoxysilane 2269-22-9, Aluminum tri-sec-butoxide **5593-70-4**, Tetrabutyl titanate
(perfluorosulfonate ionomer-aluminum or titanium silicon oxide nanocomposites prepd. via polymer-in situ sol-gel method and their structure)

L11 ANSWER 5 OF 8 HCA COPYRIGHT 2007 ACS on STN

118:259826 Manufacture of multiply, long-fiber-reinforced ceramics, glass-ceramics, and glass, and the composites obtained. Colomban, Philippe; Menet, Martine; Mouchon, Emmanuelle; Courtemanche, Gilles; Parlier, Michel (Office National d'Etudes et de Recherches Aerospatiales, Fr.). Eur. Pat. Appl. EP 498698 A1 19920812, 25 pp. DESIGNATED STATES: R: DE, GB, IT, SE. (French). CODEN: EPXXDW. APPLICATION: EP 1992-400235 19920129. PRIORITY: FR 1991-1237 19910204.

AB In this process, comprising impregnating fibrous structures with

≥ 1 liq. 1st precursors and ≥ 1 particulate 2nd precursors, and heat-treating the combined material to transform the 1st and 2nd precursors into a continuous matrix, the fibrous structure is formed by forming a stack of woven textiles or nonwoven webs of long fibers preimpregnated with the precursors, both of which being capable of forming glass, glass-ceramics, or ceramics from alkoxides by sol-gel process, the 1st one of which still consisting of a water-rich gel, and the 2nd of dry particles contg. only a few percent water and sinterable at a temp. much lower than the final compn., the stack is hot pressed, whereby the voids between the particulate precursors and the fibers are filled completely by the gel, and sintered to give the composites. The composites consist of carbide-, nitride-, or carbonitride fibers in a NASICON-type matrix having general formula $M1+xM'2SixP3-xO12$ [$M = Na, Li, K, Ag$; $M' = Zr$, and/or Ti , optionally partially replaced by Sc, Ta , or Mg (the charge deficit being compensated for by an increase in M); $x = 0.2-3$]. The 7-step process for the manuf. of SiC fiber-reinforced matrixes, e.g., mullite ($3Al2O3.2SiO2.0.1B2O3$) from a soln. of $Al(EtMeCHO)3$, $Si(OMe)4$, and $B(Bu)3$ in $Me2CHOH$, is described.

IT 5593-70-4, Titanium tetrabutoxide
 (alkoxide solns. contg., in Nicalon-reinforced mullite ceramics
 manuf. by hot pressing of gelled and particulate
 precursor-impregnated and stacked long-fiber plies)
 RN 5593-70-4 HCA
 CN 1-Butanol, titanium(4+) salt (4:1) (CA INDEX NAME)

$H_3C-CH_2-CH_2-CH_2-OH$

● $1/4$ Ti(IV)

IC ICM C03C014-00
 ICS C04B030-02; C04B035-80
 CC 57-2 (Ceramics)
 IT 681-84-5, Silicon tetramethoxide 688-74-4, Tributylborate
 824-35-1 2269-22-9, Aluminum tri(sec-butoxide)
 5593-70-4, Titanium tetrabutoxide 7790-69-4, Lithium
 nitrate
 (alkoxide solns. contg., in Nicalon-reinforced mullite
 ceramics manuf. by hot pressing of gelled and particulate
 precursor-impregnated and stacked long-fiber plies)

L11 ANSWER 6 OF 8 HCA COPYRIGHT 2007 ACS on STN

112:66874 Optical information recording medium. Kanno, Toshiyuki;
 Watanabe, Hitoshi; Nozaki, Shimako (Olympus Optical Co., Ltd.,

Japan). Jpn. Kokai Tokkyo Koho JP 01048244 A 19890222 Heisei, 7 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1987-204454 19870818.

AB In an optical information recording medium obtained by forming an optical recording layer based on an org. colorant on a transparent support, a subbing layer is placed between the transparent support and the optical recording layer consisting of a mixt. of a polymeric compn., based on OH-or CO₂H-group contg. photopolymerizable monomer, oligomer, and polymers 10-70%, and **alkoxid(s)**, phenoxide(s) or chelates of Al, Ti, Si, Zr, Tn, Zn, Mg, Ni, and Cu.

IT 123977-03-7

(subbing layer for optical recording medium using)

RN 123977-03-7 HCA

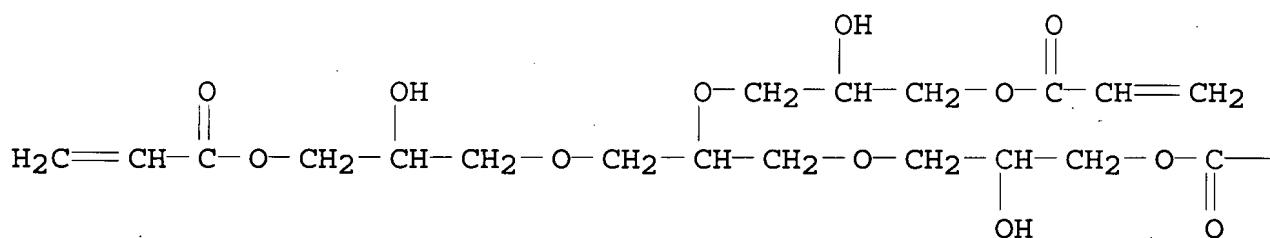
CN 2-Propenoic acid, 2-[[3-[(1-oxo-2-propenyl)oxy]-2,2-bis[[[(1-oxo-2-propenyl)oxy]methyl]propoxy]methyl]-2-[[[(1-oxo-2-propenyl)oxy]methyl]-1,3-propanediyl ester, polymer with 1-butanol titanium(4+) salt and 1,2,3-propanetriyltris[oxy(2-hydroxy-3,1-propanediyl)] tri-2-propenoate (9CI) (CA INDEX NAME)

CM 1

CRN 90802-83-8

CMF C21 H32 O12

PAGE 1-A



PAGE 1-B

—CH=CH₂

CM 2

Wightman, James P.; Ward, Thomas C. Va. Tech Cent. Adhesion Sci.: Blacksburg, Va. (English) 1987. CODEN: 56OCAD.

AB Oxide layers were created on Ti-6Al-4V by 4 pretreatments: H₂CrO₄ anodization, CAA; NaOH₄ anodization, SHA; TURCO basic etch, TURCO; and phosphate/fluoride acidic etch, P/F. The oxides were characterized phys., by SEM, scanning TEM, and profilometry; and chem. by XPS and AES. The anodically produced oxides were porous, with pore diams. of 40 to 50 nm. P/F and TURCO showed no porosity. Depth profiles by AES showed oxide thicknesses in decreasing order of SHA, CAA, TURCO, P/F. All adhesive bonding was done with a structural epoxy, FM-300U. The stress durability and wedge test showed vast differences in bond durability. The SHA and CAA were equally durable in 80°, 95% humidity. TURCO is slightly less durable, with P/F exhibiting no durability to hot-wet environments. Surface area of contact between the adhesive and adherend is proposed as the reason for variation in bond durability. CAA and SHA are porous and thus possess the highest surface area. TURCO was the roughest surface and, therefore, of higher surface area than the smoother P/F surface. **sec-Bu Al alkoxide** significantly enhanced the bond durability of the P/F pretreated bonds.

IT 12743-70-3, Ti-6Al-4V

(epoxy-bonded joints of, durability of, in hot humid environment)

RN 12743-70-3 HCA

CN Titanium alloy, base, Ti 88-91, Al 5.5-6.75, V 3.5-4.5, Fe 0-0.40, O 0-0.20, C 0-0.10, N 0-0.05, H 0-0.015 (UNS R56400) (CA INDEX NAME)

Component	Component Percent			Component Registry Number
=====+=====+=====				
Ti	88	-	91	7440-32-6
Al	5.5	-	6.75	7429-90-5
V	3.5	-	4.5	7440-62-2
Fe	0	-	0.40	7439-89-6
O	0	-	0.20	17778-80-2
C	0	-	0.10	7440-44-0
N	0	-	0.05	17778-88-0
H	0	-	0.015	12385-13-6

CC 56-9 (Nonferrous Metals and Alloys)

IT 12743-70-3, Ti-6Al-4V

(epoxy-bonded joints of, durability of, in hot humid environment)

L11 ANSWER 8 OF 8 HCA COPYRIGHT 2007 ACS on STN

105:214120 Film-forming adhesives for teeth and bones. Kawaguchi, Toshio; Murata, Yasuo; Kusumoto, Koji (Tokuyama Soda Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 61151104 A 19860709 Showa, 53 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 1984-271917

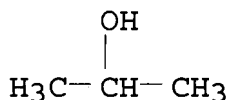
19841225.

AB Film-forming adhesives for teeth and bones consist of polymers contg. (HZ1)(Z2:)P= group (Z1, Z2 = O, S) and **alkoxides** of Ti, Zr, Al, Sn, Ca, or Fe with or without chelators. The adhesives are antimicrobial. Thus, vinylphosphonate was polymd. in the presence of 2,2'-azobis(2-aminodipropene)-HCl to form vinylphosphonate polymer. An adhesive consisted of soln. A contg. 5 parts vinylphosphonate polymer and 95 parts EtOH, and soln. B contg. 2 parts tetra-Bu zirconate and 98 parts EtOH.

IT 546-68-9 5128-29-0 5593-70-4
(dental and bone adhesives contg. phosphorus-contg. polymers and)

RN 546-68-9 HCA

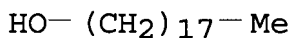
CN 2-Propanol, titanium(4+) salt (4:1) (CA INDEX NAME)



●1/4 Ti(IV)

RN 5128-29-0 HCA

CN 1-Octadecanol, titanium(4+) salt (4:1) (CA INDEX NAME)



●1/4 Ti(IV)

RN 5593-70-4 HCA

CN 1-Butanol, titanium(4+) salt (4:1) (CA INDEX NAME)



●1/4 Ti(IV)

IC ICM A61K006-00

CC 63-7 (Pharmaceuticals)
Section cross-reference(s): 37

IT 546-68-9 555-31-7 556-91-2 1071-76-7 1184-61-8.

2171-98-4 3085-30-1 5128-29-0 5593-70-4
 7360-47-6 14254-05-8 14995-22-3 15571-47-8 15571-51-4
 51287-43-5 98906-82-2

(dental and bone adhesives contg. phosphorus-contg. polymers and)

=> D L12 1-12 CBIB ABS HITSTR HITRN

L12 ANSWER 1 OF 12 HCA COPYRIGHT 2007 ACS on STN

144:90818 Compositions and methods for water control and strengthening unconsolidated formations. Davidson, Eric (UK). U.S. Pat. Appl. Publ. US 2005284667 A1 20051229, 9 pp. (English). CODEN: USXXCO. APPLICATION: US 2004-868562 20040615.

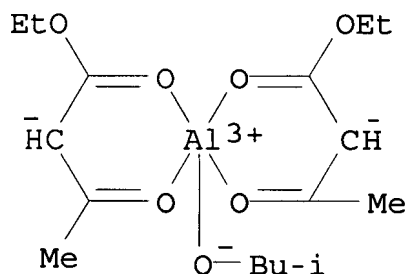
AB The present invention relates, in general, to subterranean fluids, and more particularly, to subterranean drilling fluids that may be useful for reducing the prodn. of water from a portion of a subterranean formation and/or stabilizing an unconsolidated portion of a subterranean formation while drilling. In some embodiments, the present invention provides methods of reducing the flow of water from a portion of a subterranean formation that comprise contacting the portion of the subterranean formation with an organoaluminum compd., the organoaluminum compd. being capable of forming a reaction product in the presence of water. The present invention also includes methods of drilling a well bore in a subterranean formation, methods of enhancing the stability of an unconsolidated portion of a subterranean formation, methods of stabilizing an unconsolidated portion of a subterranean formation, and drilling fluids.

IT 15636-25-6

(compns. and methods for water control and strengthening unconsolidated formations)

RN 15636-25-6 HCA

CN Aluminum, bis[ethyl 3-(oxo-κO)butanoato-κO'] (2-methyl-1-propanolato) - (9CI) (CA INDEX NAME)



IT 15636-25-6

(compns. and methods for water control and strengthening unconsolidated formations)

L12 ANSWER 2 OF 12 HCA COPYRIGHT 2007 ACS on STN

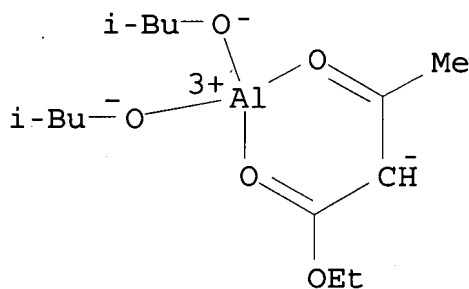
143:230989 Nanosize inorganic particle dispersions, preparation thereof, articles, electronic packaging materials, and electric insulators therefrom, and semiconductor devices and electric circuit boards therewith. Sugioka, Takuo; Tsujino, Yasunori (Nippon Shokubai Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2005226045 A 20050825, 27 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2004-38616 20040216.

AB The dispersions, contg. inorg. particles with radius of gyration (r) ≤ 50 nm and wt. ratio of fraction with $r < 10$ nm and 10-50 nm (1-40):(60-99), are prepd. by hydrolytic condensation of alkoxides and/or carboxylic acid metal salts under stirring, supplying them to reactors contg. (dild.) dispersing media with viscosity (η ; at 20°) ≤ 1000 P from around liq. surface of the media, while supplying water from reactor bottoms. The media may comprise org. solvents or moldable resin compns. (e.g., polyphenols and epoxy resins). Electronic packaging materials and elec. insulators, for semiconductor devices and printed circuit boards, resp., show good heat and fire resistance (with no halogen- or P-contg. fireproofing agents) and low water absorption. Thus, $(\text{MeO})_4\text{Si}$ was added to a reactor contg. phenol-p-xylylene glycol copolymer, while adding water from the bottom, to give inorg. particle dispersion, which was mixed with bisphenol-type epoxy resin (YD 127), applied on Cu foil, and thermally cured to give a specimen, showing T_g 112° , wt. gain 0.91% after 100-h pressure cooker test, and UL 94 fire resistance rating V-0.

IT 15629-83-1
(in prepn. of inorg. particles; prepn. of nanosize inorg. particle dispersions for semiconductor packaging materials or printed circuit board insulators with good fire resistance)

RN 15629-83-1 HCA

CN Aluminum, [ethyl 3-(oxo- κO)butanoato- $\kappa\text{O}'$]bis(2-methyl-1-propanolato)-, (T-4)- (9CI) (CA INDEX NAME)



IT 15629-83-1
(in prepn. of inorg. particles; prepn. of nanosize inorg.

particle dispersions for semiconductor packaging materials or printed circuit board insulators with good fire resistance)

L12 ANSWER 3 OF 12 HCA COPYRIGHT 2007 ACS on STN

141:268493 Liquid developer containing support solution made from silicone oil and organic aluminum compound having acetylacetonate group, manufacture thereof, image-forming method, and image-forming apparatus. Fukuda, Makoto (Fujitsu Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004258468 A 20040916, 20 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-50799 20030227.

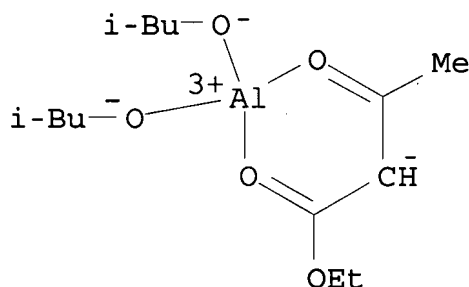
AB Disclosed is the liq. developer comprising a toner particle and a support soln., wherein the support soln. is made from (a) a silicone oil and (b) an org. Al compd., an org. Al compd. partially or fully substituted by acetylacetonate group, or a mixt. thereof.

IT 15629-83-1, Chelope Al-EB 102

(liq. developer contg. support soln. made from silicone oil and org. aluminum compd. having acetylacetonate group)

RN 15629-83-1 HCA

CN Aluminum, [ethyl 3-(oxo-κO)butanoato-κO']bis(2-methyl-1-propanolato)-, (T-4)- (9CI) (CA INDEX NAME)



IT 15629-83-1, Chelope Al-EB 102

(liq. developer contg. support soln. made from silicone oil and org. aluminum compd. having acetylacetonate group)

L12 ANSWER 4 OF 12 HCA COPYRIGHT 2007 ACS on STN

141:268244 Light-emitting diodes and their die-bonding pastes with high transparency, heat resistance, and adhesion strength. Tsumura, Manabu (Kanegafuchi Chemical Industry Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2004266134 A 20040924, 56 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2003-55663 20030303.

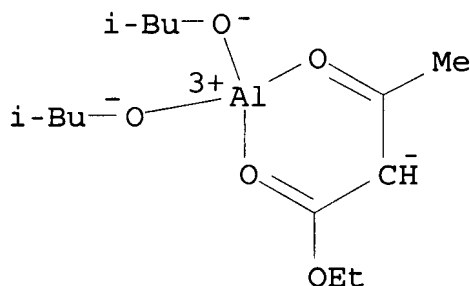
AB The pastes comprise (A) org. compds. bearing ≥ 2 SiH-reactive C:C double bonds, (B) silyl group-bearing compds., (C) hydrosilylation catalysts, (D) silane coupling agents and/or epoxides, and (E) silanol condensation catalysts (e.g., org. Al compds., borates). The pastes may contain inorg. members such as Au, Ag, Al, alumina, etc.

IT 15629-83-1

(silanol condensation catalysts; heat-resistant transparent encapsulants contg. hydrosilylation systems for light-emitting diodes)

RN 15629-83-1 HCA

CN Aluminum, [ethyl 3-(oxo-κO)butanoato-κO']bis(2-methyl-1-propanolato)-, (T-4)- (9CI) (CA INDEX NAME)



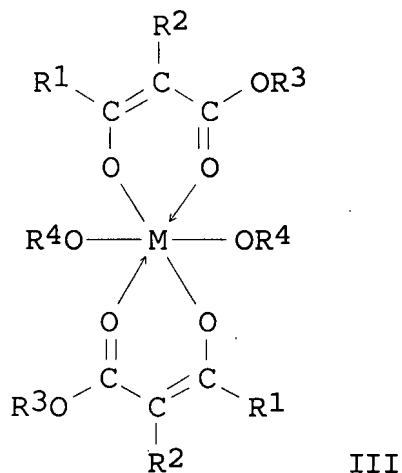
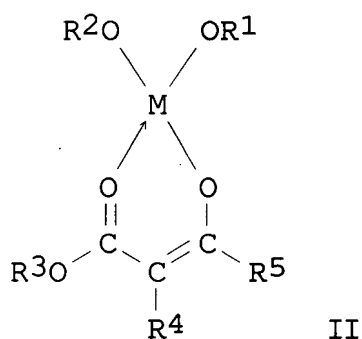
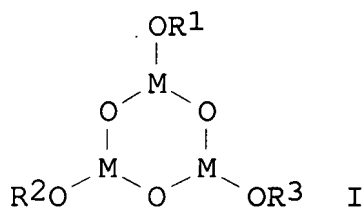
IT 15629-83-1

(silanol condensation catalysts; heat-resistant transparent encapsulants contg. hydrosilylation systems for light-emitting diodes)

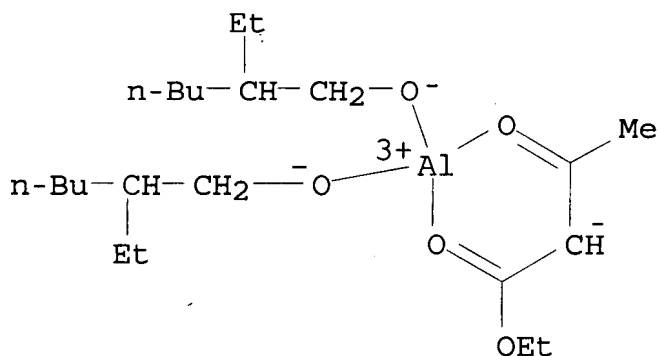
L12 ANSWER 5 OF 12 HCA COPYRIGHT 2007 ACS on STN

138:393131 Desiccant from organometallic compound. Tsuruoka, Masahisa; Takahashi, Naomitsu; Tanaka, Satoshi; Hieda, Shigeru (Futaba Denshi Kogyo Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003144830 A 20030520, 13 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-341308 20011107.

GI

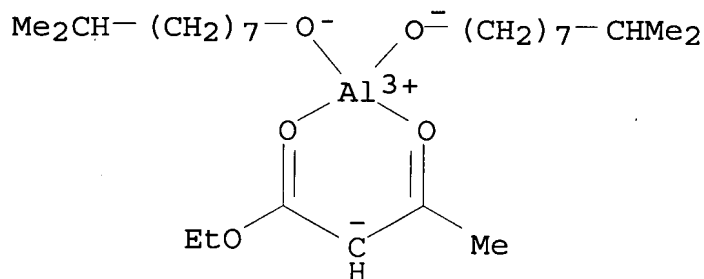


- AB The title desiccant is represented by I, II (R1-5 = alkyl, aryl, etc.; M = trivalent metal), or III (M = tetravalent metal). The desiccant is integrated into an org. EL device to prevent the formation of dark spots in a non-light emitting area of the device.
- IT 94023-59-3, Chelope EH-2 393780-04-6, Chelope C10-2
(desiccant from organometallic compd. for electroluminescent devices)
- RN 94023-59-3 HCA
- CN Aluminum, bis(2-ethyl-1-hexanolato)[ethyl 3-(oxo-κO)butanoato-κO']-, (T-4) - (9CI) (CA INDEX NAME)



RN 393780-04-6 HCA

CN Aluminum, [ethyl 3-(oxo-κO)butanoato-κO']bis(8-methyl-1-nonanolato)-, (T-4)- (9CI) (CA INDEX NAME)



IT 94023-59-3, Chelope EH-2 393780-04-6, Chelope
C10-2

(desiccant from organometallic compd. for electroluminescent devices)

L12 ANSWER 6 OF 12 HCA COPYRIGHT 2007 ACS on STN

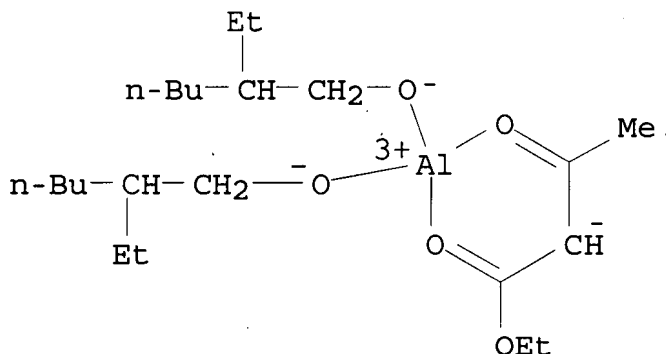
138:376150 Organic EL device using transparent water-trapping film. Tsuruoka, Masahisa; Takahashi, Naomitsu; Tanaka, Akira; Hieda, Shigeru (Futaba Denshi Kogyo Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2003142256 A 20030516, 12 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-341307 20011107.

AB The device having a laminated structure kept in a closed vessel is characterized by a transparent water-trapping film formed in the vessel. The film may be made of organometal compds. The film efficiently adsorbs water to prevent dark spot generation in the device.

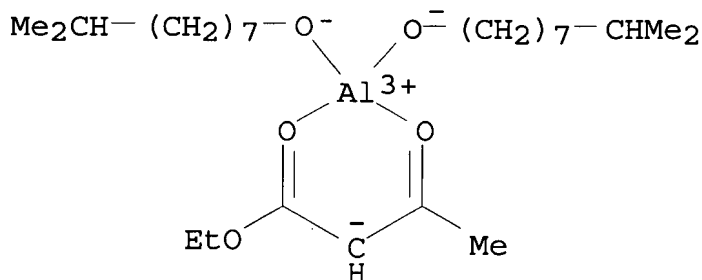
IT 94023-59-3, Chelope EH-2 393780-04-6, Chelope C
10-2

(film; org. electroluminescent device using transparent water-trapping film for dark spot prevention)

RN 94023-59-3 HCA
 CN Aluminum, bis(2-ethyl-1-hexanolato)[ethyl 3-(oxo-κO)butanoato-κO']-, (T-4)- (9CI) (CA INDEX NAME)



RN 393780-04-6 HCA
 CN Aluminum, [ethyl 3-(oxo-κO)butanoato-κO']bis(8-methyl-1-nonanolato)-, (T-4)- (9CI) (CA INDEX NAME)



IT 94023-59-3, Chelope EH 2 393780-04-6, Chelope C
 10-2
 (film; org. electroluminescent device using transparent
 water-trapping film for dark spot prevention)

L12 ANSWER 7 OF 12 HCA COPYRIGHT 2007 ACS on STN

137:147570 Organic electroluminescent element equipped with a film-like
 drying means. Takahashi, Hisamitsu; Hieda, Shigeru; Saito, Yuji
 (Futaba Denshi Kogyo Kabushiki Kaisha, Japan). Brit. UK Pat. Appl.
 GB 2368192 A 20020424, 51 pp. (English). CODEN: BAXXDU.
 APPLICATION: GB 2001-11018 20010504. PRIORITY: JP 2000-134747,
 20000508.

AB Org. electroluminescent elements comprising a laminate having a
 structure in which org. electroluminescent material layers are
 sandwiched between a pair of opposite electrodes; a sealed container
 into which is placed the laminate; and a drying member which is
 placed in the sealed container and prevents contamination of the

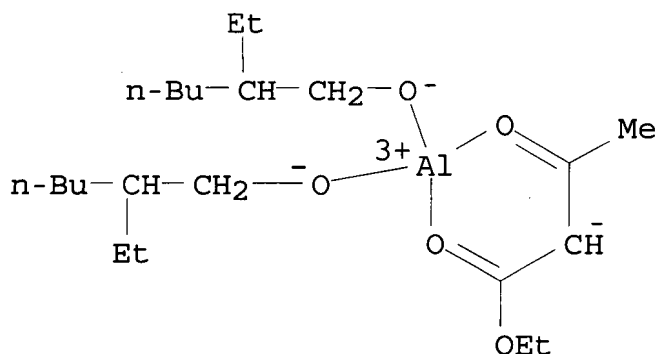
org. electroluminescent material layers by moisture are described in which the drying member is formed of an organometallic compd.

IT 94023-59-3, Chelope EH 2 393780-04-6, Chelope C
10-2

(drying agent; org. electroluminescent elements provided with organometallic films as drying agents)

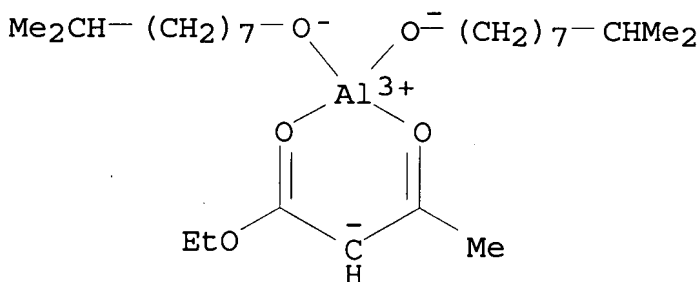
RN 94023-59-3 HCA

CN Aluminum, bis(2-ethyl-1-hexanolato)[ethyl 3-(oxo-κO)butanoato-κO']-, (T-4)- (9CI) (CA INDEX NAME)



RN 393780-04-6 HCA

CN Aluminum, [ethyl 3-(oxo-κO)butanoato-κO']bis(8-methyl-1-nonanolato)-, (T-4)- (9CI) (CA INDEX NAME)



IT 94023-59-3, Chelope EH 2 393780-04-6, Chelope C
10-2

(drying agent; org. electroluminescent elements provided with organometallic films as drying agents)

L12 ANSWER 8 OF 12 HCA COPYRIGHT 2007 ACS on STN

136:158908 Organic electroluminescent element containing drying agent. Takahashi, Naomitsu; Hieda, Shigeru; Saito, Yuji (Futaba Denshi Kogyo Co., Ltd., Japan). Jpn. Kokai Tokkyo Koho JP 2002033187 A 20020131, 14 pp. (Japanese). CODEN: JKXXAF. APPLICATION: JP 2001-101437 20010330. PRIORITY: JP 2000-134747 20000508.

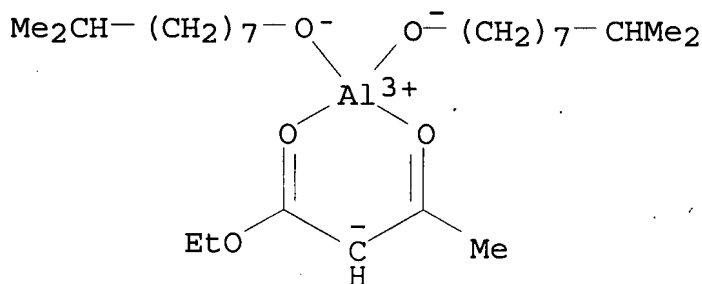
AB The invention relates to an org. electroluminescent element contg. a drying agent to prevent the growth of dark spots, wherein the drying agent is made from an organometallic compd. such as aluminum oxide octoate.

IT 393780-04-6

(org. electroluminescent element contg. drying agent)

RN 393780-04-6 HCA

CN Aluminum, [ethyl 3-(oxo-κO)butanoato-κO']bis(8-methyl-1-nonanolato)-, (T-4)- (9CI) (CA INDEX NAME)



IT 393780-04-6

(org. electroluminescent element contg. drying agent)

L12 ANSWER 9 OF 12 HCA COPYRIGHT 2007 ACS on STN

122:268195 Scavengers for catalyst poisons in curing of siloxane compositions by hydrosilylation. Yoshikawa, Yuji; Yamamoto, Kenji; Tanaka, Kouichi; Takarada, Mitsuhiro (Shin-Etsu Chemical Co., Ltd., Japan). Eur. Pat. Appl. EP 604104 A2 19940629, 11 pp. DESIGNATED STATES: R: DE, FR, GB. (English). CODEN: EPXXDW. APPLICATION: EP 1993-310069 19931214. PRIORITY: JP 1992-353620 19921214.

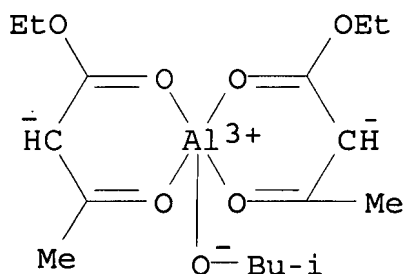
AB The title scavengers comprising org. Fe and Al compds. [e.g., iso-BuOAlR₂ (R = Et acetoacetato)] are added to compns. (e.g., for coating) contg. an alkenyl and/or alkynyl group-contg. siloxane, a siloxane contg. ≥2 Si-bonded H, and a hydrosilylation catalyst (e.g., Pt) to minimize inhibition of curing by catalyst poisons contg. N, P, S, Sn, or As.

IT 15636-25-6, Bis(ethyl acetoacetato)aluminum isobutoxide

(scavenger for hydrosilylation catalyst poisons in curing of siloxanes)

RN 15636-25-6 HCA

CN Aluminum, bis[ethyl 3-(oxo-κO)butanoato-κO'] (2-methyl-1-propanolato)- (9CI) (CA INDEX NAME)



IT 15636-25-6, Bis(ethyl acetoacetato)aluminum isobutoxide
(scavenger for hydrosilylation catalyst poisons in curing of
siloxanes)

L12 ANSWER 10 OF 12 HCA COPYRIGHT 2007 ACS on STN

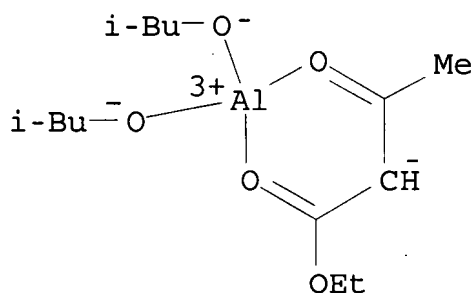
121:261558 Sol-Gel Synthesis of High Surface Area Aluminum Phosphate: A
Thermally Reversible Sol-Gel System. Harmer, M. A.; Vega, A. J.;
Flippen, R. B. (E. I. DuPont, Wilmington, DE, 19880, USA).
Chemistry of Materials, 6(11), 1903-5 (English) 1994. CODEN:
CMATEX. ISSN: 0897-4756.

AB In this paper we describe a novel reaction, based upon sol-gel chem.
to produce a high surface area aluminum phosphate (P/Al = 1), in
excess of 550 m²/g. The sol-gel prepn. of aluminum phosphate is
based upon the reaction of aluminum(bis-
isobutoxide)ethylacetoacetate with phosphoric acid, where the
aluminum complex is first pre-reacted with low pH water which is
essential in order to form homogeneous gels. We also report a very
rare example of a sol-gel reaction which is thermally reversible.
The sol particles can be readily controlled, for example from 23 to
13 nm, by careful control of the chem. Potential applications for
this synthetic approach range from use of aluminum phosphate as a
catalyst and also as a catalyst support, to the use of aluminum
phosphate in coatings.

IT 15629-83-1
(aluminum source; prepn. of high-surface area aluminum phosphate
by sol-gel processing)

RN 15629-83-1 HCA

CN Aluminum, [ethyl 3-(oxo-κO)butanoato-κO']bis(2-methyl-1-
propanolato)-, (T-4)- (9CI) (CA INDEX NAME)



IT 15629-83-1

(aluminum source; prepn. of high-surface area aluminum phosphate by sol-gel processing)

L12 ANSWER 11 OF 12 HCA COPYRIGHT 2007 ACS on STN

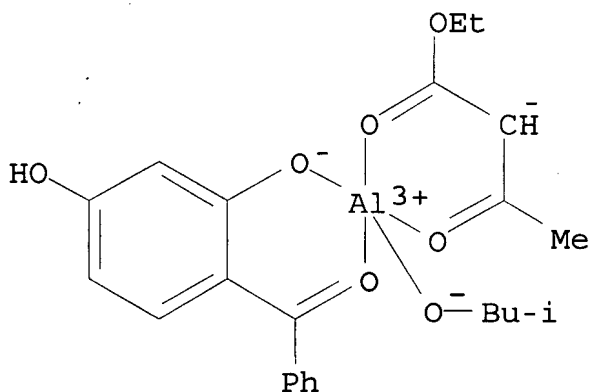
65:100548 Original Reference No. 65:18839d-f Use of aging inhibitors in paints based on alkyd resins. Bogatyrev, P. M.; Chel'tsova, M. S. F.A.T.I.P.E.C. (Federation Assoc. Techniciens Ind. Peintures, Vernis, Emaux Encres Imprimerie Europe Continental), Congr., 8, 462-6 (German) 1966.

AB Salicylic acid and 2,4-dihydroxybenzophenone, which are widely used as light stabilizers in plastics, cannot be used in air-drying paints because of their inhibiting action on autoxidn. reactions. Intermol. complexes of Al with Ph salicylate or Et acetoacetate, however, retain the uv absorption capacity of the org. moiety and do not interfere with the drying process. The light-stabilizing effect on the Al chelates is more pronounced in nonpigmented resins. The concn. of the stabilizer, for instance that of Al diisobutoxyphenyl salicylate, was kept at .apprx.10% of that of the resin binder. By ir absorption measurements, it was found that interactions take place between the complex Al compd. and oxidn. products of the oil components of the alkyd resins leading to formation of new resistant coordinate bonds with the metal. It is suggested that the protective action of the Al chelates is not solely based on the absorption of uv radiation, but can also be related to the reinforcement of the paint films by polymeric aluminates.

IT 14839-42-0, Aluminum, (2,4-dihydroxybenzophenonato) (hydrogen acetoacetato)isobutoxy-, ethyl ester 15629-83-1, Aluminum, (hydrogen acetoacetato)diisobutoxy-, ethyl ester 15636-25-6, Aluminum, bis(hydrogen acetoacetato)isobutoxy-, diethyl ester (in paint from alkyd resins, as aging inhibitor)

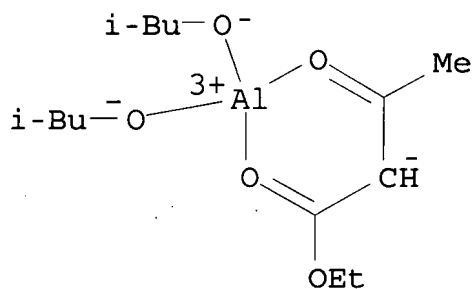
RN 14839-42-0 HCA

CN Aluminum, (2,4-dihydroxybenzophenonato) (hydrogen acetoacetato)isobutoxy-, ethyl ester (7CI, 8CI) (CA INDEX NAME)



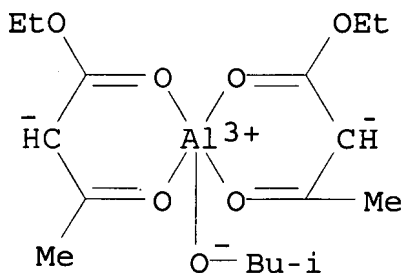
RN 15629-83-1 HCA

CN Aluminum, [ethyl 3-(oxo-κO)butanoato-κO']bis(2-methyl-1-propanolato)-, (T-4) - (9CI) (CA INDEX NAME)



RN 15636-25-6 HCA

CN Aluminum, bis[ethyl 3-(oxo-κO)butanoato-κO'] (2-methyl-1-propanolato)- (9CI) (CA INDEX NAME)



IT 14839-42-0, Aluminum, (2,4-dihydroxybenzophenonato) (hydrogen acetoacetato)isobutoxy-, ethyl ester 15629-83-1, Aluminum, (hydrogen acetoacetato)diisobutoxy-, ethyl ester 15636-25-6, Aluminum, bis(hydrogen acetoacetato)isobutoxy-, diethyl ester (in paint from alkyd resins, as aging inhibitor)

L12 ANSWER 12 OF 12 HCA COPYRIGHT 2007 ACS on STN

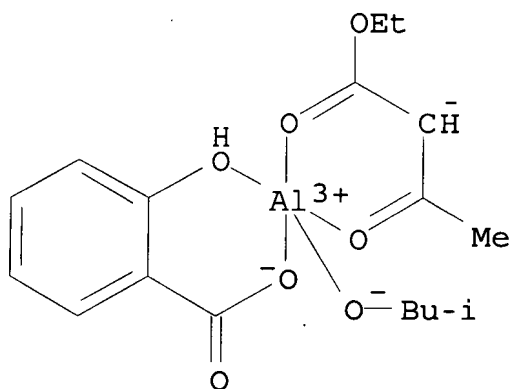
63:4201 Original Reference No. 63:795c-e The effect of some aluminum chelates on the stability of alkyd coatings against ultraviolet radiation. Chel'tsova, M. S.; Bogatyrev, P. M.; Kushnarenko, N. A. Lakokrasochnye Materialy i Ikh Primenenie (1), 6-11 (Russian) 1965. CODEN: LAMAAD. ISSN: 0130-9013.

AB Chelates were obtained from Al isobutylate with some photostabilizers of the salicylic acid and 2,4-dihydroxybenzophenone (II) type absorbing selectively in the uv region. The Al chelates (I) are miscible with alkyd resins, modified with linseed oil, and do not prevent film drying. By introducing these I into pigmented or unpigmented coatings, their stability to uv light under conditions of accelerated or atm. aging is increased. The protective properties of I in coatings based on alkyd resins are caused by their uv absorption and by the interaction of Al with the products of oxidn. of the fatty component of the alkyd resin. These complexes enhance the strength of the film. The results from weatherometer tests of films contg. I and acetoacetic or salicylic acid or II are tabulated. Uv absorption spectra of recent and aged films are given. 26 references.

IT 14495-00-2, Aluminum, (hydrogen acetoacetato)isobutoxy(salicylato)-, ethyl ester 14839-42-0, Aluminum, (2,4-dihydroxybenzophenonato) (hydrogen acetoacetato)isobutoxy-, ethyl ester 15629-83-1, Aluminum, (hydrogen acetoacetato)diisobutoxy-, ethyl ester (coatings from alkyd resins contg. ultraviolet light-stabilizing)

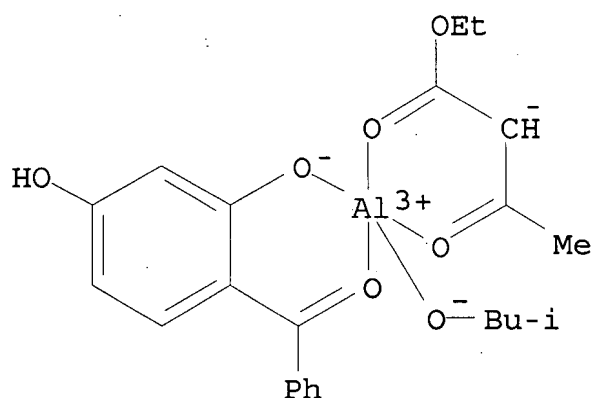
RN 14495-00-2 HCA

CN Aluminum, (ethyl 3-oxobutanoato-01,03) (2-hydroxybenzoato-01,02) (2-methyl-1-propanolato)- (9CI) (CA INDEX NAME)



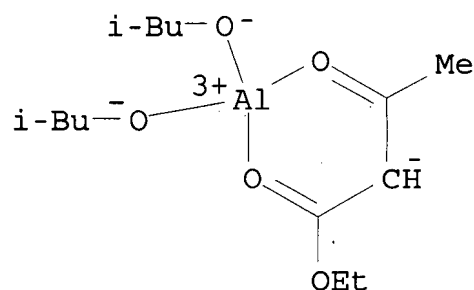
RN 14839-42-0 HCA

CN Aluminum, (2,4-dihydroxybenzophenonato) (hydrogen acetoacetato)isobutoxy-, ethyl ester (7CI, 8CI) (CA INDEX NAME)



RN 15629-83-1 HCA

CN Aluminum, [ethyl 3-(oxo-κO)butanoato-κO']bis(2-methyl-1-propanolato)-, (T-4)- (9CI) (CA INDEX NAME)



IT 14495-00-2, Aluminum, (hydrogen acetoacetato)isobutoxy(salicylato)-, ethyl ester 14839-42-0, Aluminum, (2,4-dihydroxybenzophenonato)(hydrogen acetoacetato)isobutoxy-, ethyl ester 15629-83-1, Aluminum, (hydrogen acetoacetato)diisobutoxy-, ethyl ester (coatings from alkyd resins contg. ultraviolet light-stabilizing)